YALE UNIVERSITY

DEPARTMENT OF MICROBIOLOGY

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Dr. J. Lederberg
Department of Genetics
Stanford University Medical School
Stanford, California

Dear Josh:

You may think it unkind of me to question you about data in a paper that you published in 1955, but I have a serious problem.

Your paper "Isolation of pre-adaptive mutants in bacteria by sib-selection" (Genetics 41, 367, 1956) appears in the reprint collection which I edited and which I use for my course in bacterial genetics. This year I asked the students on an examination to state how your method was used to disprove Hinshelwood's argument that fluctuation test results simply reflect uncontrolled environmental conditions rather than clone sizes. Several students quoted your data from the top of page 373 of your article, and went on to point out that your data are impossible. Unfortunately, they're right.

Tube 41 (Table 1) contained 7.0 ml of broth, half of which was plated to count str-r mutants. That leaves 3.5 ml. How, then, did you manage to get 10 one-ml. samples from this tube, as you say on pages 372-373?

Furthermore, you say (page 373) that each ml of Tube 41 had ten resistants. Since one ml was diluted to seven ml, you expect seven-fold multiplication, to give an expected crop of 70. But every tube had about 140.

If I try to correct the data by assuming that you took smaller samples from Tube 41, I still can't find any volume of sample that would give the reported results. For example, if (in order to get 10 samples from the available 3.5 ml) you used 0.3 ml samples, each would have had 3 mutants and would have yielded 21 mutants after a seven-fold increase.

Please solve this puzzle for me before I have to assign this part of the book to the students again!

Best regards,

Ed

Edward A. Adelberg

EAA:cm

P.S. A copy of this sad letter is on its way to Luca